Contents of Volume 177, No. 1

FULL PAPERS

PAGE

Proteins

Some magnetic properties of *Pseudomonas* cytochrome oxidase.
By T. A. Walsh, M. K. Johnson, C. Greenwood, D. Barber, J. P. Springall & A. J. Thomson 29

Characterization of a proteolytic-enzyme inhibitor with allergenic activity. Multiple functions of a parasite-derived protein.
By P. Willadsen & G. A. Riding 41

Identification of organic phosphorus covalently bound to collagen and non-collagenous proteins of chicken-bone matrix. The presence of *O*-phosphoserine and *O*-phosphothreonine in non-collagenous proteins, and their absence from phosphorylated collagen.
By L. Cohen-Solal, J. B. Lian, D. Kossiva & M. J. Glimcher 81

Characterization of a high-molecular-weight glycoprotein isolated from the pulmonary secretions of patients with alveolar proteinosis.
By S. Sahu & W. S. Lynn 153

Purification and partial characterization of the exotoxin of *Corynebacterium ovis*.
By E. O. Onon 181

Intraspecies heterogeneity of epidermal keratins isolated from bovine hoof and snout.
By L. D. Lee, J. Kubilus & H. P. Baden 187

Alkaline phosphatase from human milk. Comparison with isoenzymes from placenta and liver.
By T. A. Hamilton, S. Z. Górnicki & H. H. Sussman 197

Interaction of dinitrophenyl groups bound to bovine serum albumin with univalent fragments of anti-dinitrophenyl antibody.
By C. G. Knight & N. M. Green 225

Partial non-cleavage by cyanogen bromide of a methionine–cystine bond from human serum albumin and bovine α-lactalbumin.
By N. Doyen & C. Lapresle 251

The characterization of the non-histone chromosomal proteins of the main classes of nuclei from rat brain fractionated by zonal centrifugation.
By S. G. Tsitilou, D. Cox, A. P. Mathias & D. Ridge 331

PAGE

Lipids

Utilization of endogenous and exogenous sources of substrate for cholesterol biosynthesis by isolated hepatocytes.
By G. F. Gibbons & C. R. Pullinger 255

Glycolipids and fatty acids of two dog kidney cell lines.
By A. E. Hougland, C. R. Gaush & W. R. Mayberry 311

Carbohydrates

The preparation of CMP-sialic acids by using CMP-acylneuraminate synthase from frog liver immobilized on Sepharose 4B.
By A. P. Corfield, R. Schauer & M. Wember 1

Enzymology

The cellulolytic enzymes of *Botryodiplodia theobromae* Pat. Separation and characterization of cellulases and β-glucosidases.
By G. M. Umezurike 9

Accumulation of UDP-glucose pyrophosphorylase by axenically grown amoebae of *Dictyostelium discoideum*.
By B. D. Hames & B. A. Hodson 21

Purification, properties and specificity of the restriction endonuclease from *Bacillus stearothermophilus*.
By C. M. Clarke & B. S. Hartley 49

Diamine-induced inhibition of liver ornithine decarboxylase.
By A. Kallio, M. Löfman, H. Pösö & J. Jänne 63

Acetyl-coenzyme A deacylase activity in liver is not an artifact. Subcellular distribution and substrate specificity of acetyl-coenzyme A deacylase activities in rat liver.
By K.-P. Grigat, K. Koppe, C.-D. Seufert & H.-D. Söling 71

Proteinase and proteinase-inhibitor activities of rat uterine myometrium during pregnancy and involution.
By E.-G. Afting, M. L. Becker & J. S. Elce 99

Occurrence of an endo-1,3-β-glucanase in culture fluids of the yeast *Candida utilis*. Purification and characterization of the enzyme activity.
By T. G. Villa, V. Notario & J. R. Villanueva 107

PAGE

Affinity chromatography of pig heart fumarase.
By S. Chaudhuri & E. W. Thomas 115

Generation of aspartate aminotransferase multiple forms by deamidation.
By J. A. Williams & R. A. John 121

Polypeptide-chain stoicheiometry and lipoic acid content of the pyruvate dehydrogenase complex of *Escherichia coli*.
By G. Hale & R. N. Perham 129
Appendix: Amidination of pyruvate dehydrogenase complex of *Escherichia coli* under denaturing conditions.
By G. Hale, E. A. Hooper & R. N. Perham 136

Measurement *in vivo* of hydrogenase-catalysed hydrogen evolution in the presence of nitrogenase enzyme in cyanobacteria.
By A. Daday, G. R. Lambert & G. D. Smith 139

Interaction of the *lacZ* β-galactosidase of *Escherichia coli* with some β-D-galactopyranoside competitive inhibitors.
By R. S. T. Loeffler, M. L. Sinnott, B. D. Sykes & S. G. Withers 145

The isolation and properties of pig submandibular kallikrein.
By M. Lemon, F. Fiedler, B. Förg-Brey, C. Hirschauer, G. Leysath & H. Fritz 159

The biosynthesis of methylcitrate.
By S. W. Weidman & G. R. Drysdale 169

Binding of human liver hydrolases by immobilized lectins.
By M. B. Fiddler, Y. Ben-Yoseph & H. L. Nadler 175

Purification and properties of four species of lysyl oxidase from bovine aorta.
By H. M. Kagan, K. A. Sullivan, T. A. Olsson, III & A. L. Cronlund 203

Derivation of molecular p*K* values from pH-dependences.
By H. B. F. Dixon 249

PAGE

Diamine and polyamine oxidase activities in normal and transformed cells.
By G. Quash, T. Keolouangkhot, L. Gazzolo, H. Ripoll & S. Saez 275

Evidence for the existence of isoenzymes of glycerol phosphate acyltransferase.
By H. G. Nimmo 283

Properties of cupric ions in benzylamine oxidase from pig plasma as studied by magnetic-resonance and kinetic methods.
By R. Barker, N. Boden, G. Cayley, S. C. Charlton, R. Henson, M. C. Holmes, I. D. Kelly & P. F. Knowles 289

Properties of the cupric sites in bovine superoxide dismutase studied by nuclear-magnetic-relaxation measurements.
By N. Boden, M. C. Holmes & P. F. Knowles 303

The multiple forms and kinetic properties of the *N*-acetyl-β-D-hexosaminidases from colonic tumours and mucosa of rats treated with 1,2-dimethylhydrazine.
By N. Mian, D. G. Herries, D. M. Cowen & E. A. Batte 319

β-2-Thienyl-DL-alanine as an inhibitor of phenylalanine hydroxylase and phenylalanine intestinal transport.
By R. A. Wapnir & G. S. Moak 347

Intermolecular Organization

Investigation of the organization of rhodopsin in the sheep photoreceptor membrane by using cross-linking reagents.
By M. Brett & J. B. C. Findlay 215

The role of link-protein in the structure of cartilage proteoglycan aggregates.
By T. E. Hardingham 237

Requirement for negatively charged dispersions of phospholipids for interaction with lipid-depleted adenosine triphosphatase.
By M. Isern de Caldentey & K. P. Wheeler 265

RAPID PAPERS

PAGE

Proteins

The breakdown of 2,3-bisphospho-D-glycerate by Fe(III)-haemoglobin.
By D. I. El-Yassin, D. A. Fell, B. B. Lloyd & R. B. Fisher 373

PAGE

Nucleic Acids

The postnatal methylation of transfer ribonucleic acid in brain. Evidence for the methylation of precursor transfer ribonucleic acid.
By E. Elahi & O. Z. Sellinger 381

GENERAL BOOKBINDING CO.
79 1978A 2 013 1 c 2000
QUALITY CONTROL MARK

PAGE

Small Molecules

The mechanism of action of xanthine oxidase. The relationship between the Rapid and Very Rapid molybdenum electron-paramagnetic-resonance signals.
By R. C. Bray, S. Gutteridge, D. A. Stotter & S. J. Tanner 357

The synthesis of phenyl[2-^{3}H]glyoxal.
By B. W. Augustus & D. W. Hutchinson 377

Enzymology

Activation of cathepsin D by glycine ethyl ester.
By A. Dionyssiou-Asteriou & E. T. Rakitzis 355

PAGE

A comparison of the substrate and electron-donor specificities of the methane mono-oxygenases from three strains of methane-oxidizing bacteria.
By D. I. Stirling, J. Colby & H. Dalton 361

6β-Bromopenicillanic acid inactivates β-lactamase I.
By V. Knott-Hunziker, B. S. Orlek, P. G. Sammes & S. G. Waley 365

The preparation of stable enzyme–coenzyme complexes with endogenous catalytic activity.
By P. Gacesa & R. F. Venn 369

Contents of Volume 177, No. 2

FULL PAPERS

PAGE

Proteins

Anomalous reaction of 4-chloro-7-nitrobenzofurazan with thiol compounds.
By K. Nitta, S. C. Bratcher & M. J. Kronman 385

Properties of the iron–sulphur proteins of the benzene dioxygenase system from *Pseudomonas putida*.
By S. E. Crutcher & P. J. Geary 393

The adsorption of protein–dodecyl sulphate complexes on *N*-(3-carboxypropionyl)aminodecyl-Sepharose.
By R. J. Yon & R. J. Simmonds 417

Triethyltin binding to cat haemoglobin. Evidence for two chemically distinct sites and a role for both histidine and cysteine residues.
By B. Elliott, W. N. Aldridge & J. W. Bridges 461

Immunoaffinity chromatography as a means of purifying legumin from *Pisum* (pea) seeds.
By R. Casey 509

Troponin C-like proteins (calmodulins) from mammalian smooth muscle and other tissues.
By R. J. A. Grand, S. V. Perry & R. A. Weeks 521

Purification and characterization of subcomponent C1q of the first component of bovine complement.
By R. D. Campbell, N. A. Booth & J. E. Fothergill 531

Additional evidence for a proform to tropoelastin from chick aorta.
By C. S. Heng-Khoo, R. B. Rucker & K. W. Buckingham 559

PAGE

Turtle-dove ovomucoid, a glycoprotein proteinase inhibitor with P_1-blood-group antigen activity.
By C. Francois-Gerard, C. Gerday & J. G. Beeley 679

Purification of the chloroplast-membrane dicyclohexylcarbodi-imide-binding proteolipid by ion-exchange chromatography.
By K. Sigrist-Nelson & A. Azzi 687

Removal of cadmium(II) from crystallized ferritin.
By J. Hegenauer, P. Saltman & L. Hatlen 693

Purification and some properties of a protein binding and deacylating initiator transfer ribonucleic acid.
By P. Pohlreich, O. Kříž, Z. Tuháčková, Z. Dušek & J. Hradec 707

The intrinsic fluorescence of isolated central-nervous-system myelin-sheath preparations.
By A. J. Crang & M. G. Rumsby 739

Lipids

The direct radioimmunoassay of oestrogen glucuronides in human female urine.
By T. S. Baker, K. M. Jennison & A. E. Kellie 729

Enzymology

'Affinity' chromatography of steroid-transforming enzymes with a non-steroidal ligand.
By A. G. C. Renwick, S. M. Chambers & P. Willcox 401

PAGE

Urinary lysosomal hydrolases in mucolipidosis II and mucolipidosis III.
By B. C. Kress & A. L. Miller 409

Circular-dichroism studies of ligand binding to dihydrofolate reductase from *Lactobacillus casei* MTX/R.
By K. Hood, P. M. Bayley & G. C. K. Roberts 425

The binding and catalytic activities of forms of ligandin after modification of its thiol groups.
By T. Carne, E. Tipping & B. Ketterer 433

Simple efficient methods for the isolation of malate dehydrogenase from thermophilic and mesophilic bacteria.
By I. P. Wright & T. K. Sundaram 441

Kinetic studies on dogfish liver glutamate dehydrogenase.
By A. H. Electricwala & F. M. Dickinson 449

Purification and properties of glutathione peroxidase from human placenta.
By Y. C. Awasthi, D. D. Dao, A. K. Lal & S. K. Srivastava 471

Zinc(II) binding to apo-(bovine erythrocyte superoxide dismutase).
By A. E. G. Cass, H. A. O. Hill, J. V. Bannister & W. H. Bannister 477

Enzyme activity in partly dissociated fragments of rat intestinal maltase/glucoamylase.
By P. R. Flanagan & G. G. Forstner 487

A four-straight-line model for the proteinase-binding characteristics of human blood serum.
By R. M. Topping & S. Seilman 493

The identification of distinctive forms of human α_2-macroglobulin by using the numerical relationship between trypsin binding in α- and β-modes.
By R. M. Topping & A. H. Craven 501

A necessary modification to the preparation of papain from any high-quality latex of *Carica papaya* and evidence for the structural integrity of the enzyme produced by traditional methods.
By B. S. Baines & K. Brocklehurst 541

Rapid aging of neurotoxic esterase after inhibition by di-isopropyl phosphorofluoridate.
By B. Clothier &. M. K. Johnson 549

The assay of xylosyltransferase in cartilage extracts. A modified procedure for preparation of Smith-degraded proteoglycan.
By J. D. Sandy 569

Comparison of chloramphenicol acetyltransferase variants in staphylococci. Purification, inhibitor studies and *N*-terminal sequences.
By J. E. Fitton & W. V. Shaw 575

PAGE

Some kinetic and other properties of the isoenzymes of aspartate aminotransferase isolated from sheep liver.
By A. Orlacchio, M. Campos-Cavieres, I. Pashev & E. A. Munn 583

Kinetics and mechanism of action of aldehyde reductase from pig kidney.
By W. S. Davidson & T. G. Flynn 595

The reaction of rabbit muscle creatine kinase with some derivatives of iodoacetamide.
By N. C. Price 603

Low-temperature kinetics of the reaction of fully reduced membrane-bound cytochrome oxidase with oxygen in the Soret, α and near-infrared regions.
By G. M. Clore & E. M. Chance 613

Disaggregation of adenylate cyclase during polyacrylamide-gel electrophoresis in mixtures of ionic and non-ionic detergents.
By A. C. Newby & A. Chrambach 623

Patterns of apparent co-operativity in a simple random non-equilibrium enzyme–substrate–modifier mechanism. Comparison with equilibrium allosteric models.
By E. P. Whitehead & M. R. Egmond 631

The mechanism of reduction of single-site redox proteins by ascorbic acid.
By A. I. Al-Ayash & M. T. Wilson 641

Control of 5-aminolaevulinate synthetase activity in *Rhodopseudomonas spheroides*. Purification and properties of the high-activity form of the enzyme.
By R. C. Davies & A. Neuberger 649

Control of 5-aminolaevulinate synthetase activity in *Rhodopseudomonas spheroides*. Binding of pyridoxal phosphate to 5-aminolaevulinate synthetase.
By R. C. Davies & A. Neuberger 661

Purification and characterization of the ferredoxin component of 25-hydroxycholecalciferol 1α-hydroxylase.
By J. A. Kulkoski & J. G. Ghazarian 673

Ligand-induced conformational transitions and secondary-structure composition of chicken liver pyruvate carboxylase.
By K. S. McGurk & H. O. Spivey 697

Enzyme-induced inactivation of transaminases by acetylenic and vinyl analogues of 4-aminobutyrate.
By R. A. John, E. D. Jones & L. J. Fowler 721

RAPID PAPERS

PAGE

Proteins

Mapping the membrane proteins of Newcastle-disease virus with a photoreactive glycolipid probe.
By J. S. Bramhall, M. A. Shiflett & B. J. Wisnieski 765

Carbohydrates

Carbohydrate composition of human placental *N*-acetylhexosaminidases A and B.
By H. Freeze, B. Geiger & A. L. Miller 749

PAGE

Enzymology

Subunit composition of human liver α-L-fucosidase.
By J. A. Alhadeff & G. L. Andrews-Smith 753

Oxidation–reduction potentials of molybdenum and iron–sulphur centres in nitrate reductase from *Escherichia coli*.
By S. P. Vincent 757

Lipid and steroid hydroperoxides as substrates for the non-selenium-dependent glutathione peroxidase.
By M. R. Shreve, P. G. Morrissey & P. J. O'Brien 761

Contents of Volume 177, No. 3

FULL PAPERS

PAGE

Proteins

The amino acid sequence of cytochrome *c'* from the purple sulphur bacterium *Chromatium vinosum*.
By R. P. Ambler, M. Daniel, T. E. Meyer, R. G. Bartsch & M. D. Kamen 819

Hydroxylysine-linked glycosides of human complement subcomponent C1q and of various collagens.
By H. Shinkai & K. Yonemasu 847

A possible role for dehydrodihydroxylysinonorleucine in collagen fibre and bundle formation.
By R. J. Boucek, N. L. Noble & Z. Gunja-Smith 853

The effects of calcium ions and pH on bovine prothrombin fragment 1. Intrinsic fluorescence studies.
By M. E. Scott, K. A. Koehler & R. G. Hiskey 879

Isolation and characterization of thiamin-binding protein from chicken egg white.
By K. Muniyappa & P. R. Adiga 887

Analysis of histones from the yeast *Saccharomyces carlsbergensis*.
By A. Pastink, T. A. Berkhout, W. H. Mager & R. J. Planta 917

The purification and characterization of bovine C4, the fourth component of complement.
By N. A. Booth, R. D. Campbell & J. E. Fothergill 959

PAGE

Nucleic Acids

Persistence of methylated bases in ribonucleic acid of Syrian golden hamster liver after administration of dimethylnitrosamine.
By G. P. Margison, J. M. Margison & R. Montesano 967

Small Molecules

Structure and synthesis of naturally occurring anhydrovitamin A_2.
By A. B. Barua, K. Verma & S. R. Das 791

Enzymology

A detailed investigation of the properties of lactate dehydrogenase in which the 'essential' cysteine-165 is modified by thioalkylation.
By D. P. Bloxham, R. P. Sharma & D. C. Wilton 769

Formation of an unstable covalent intermediate during the inhibition of electric-eel acetylcholinesterase with 1,3,2-dioxaphosphorinane 2-oxides.
By Y. Ashani & H. Leader 781

Aminotripeptidase, a cytosol enzyme from rabbit intestinal mucosa.
By C. Doumeng & S. Maroux 801

UDP-glucosyltransferase activity of housefly microsomal fraction.
By A. Morello & Y. Repetto 809

PAGE

Selective inactivation of lactate dehydrogenase of rat tissues by sodium deoxycholate.
By T. Lehnert & H. H. Berlet 813

Convolution analysis of transcription by yeast DNA-dependent ribonucleic acid polymerase A. A mathematical method for studying ribonucleic acid chain elongation.
By C. S. Cooper & R. V. Quincey 825

Inhibitory effects of histidine and their reversal. The roles of pyruvate carboxylase and N^{10}-formyltetrahydrofolate dehydrogenase.
By M. C. Scrutton & I. Beis 833

Multiple inhibition of glutathione *S*-transferase A from rat liver by glutathione derivatives. Kinetic analysis supporting a steady-state random sequential mechanism.
By I. Jakobson, M. Warholm & B. Mannervik 861

A steady-state-kinetic model for formaldehyde dehydrogenase from human liver. A mechanism involving NAD^+ and the hemimercaptal adduct of glutathione and formaldehyde as substrates and free glutathione as an allosteric activator of the enzyme.
By L. Uotila & B. Mannervik 869

Comparison of endogenous and exogenous RNA primers of poly(U) polymerase in rat hepatic ribosomes.
By T. T. Hayashi & K. MacFarlane 895

PAGE

Characterization of the second prosthetic group of the flavoenzyme NADH–acceptor reductase (component C) of the methane mono-oxygenase from *Methylococcus capsulatus* (Bath).
By J. Colby & H. Dalton 903

Effects of nucleophiles on the breakdown of the benzylpenicilloyl–enzyme complex EI* formed between benzylpenicillin and the exocellular DD-carboxypeptidase–transpeptidase of *Streptomyces* strain R61.
By A. Marquet, J.-M. Frère, J.-M. Ghuysen & A. Loffet 909

Nucleotide metabolism by microsomal UDP-glucuronyltransferase and nucleoside diphosphatase as determined by ^{31}P nuclear-magnetic-resonance spectroscopy.
By S. A. E. Finch, T. F. Slater & A. Stier 925

Compound C_2, a product of the reaction of oxygen and the mixed-valence state of cytochrome oxidase. Optical evidence for a type-I copper.
By B. Chance, C. Saronio & J. S. Leigh, Jr. 931

Liver monoamine oxidase in the obese–hyperglycaemic (*ob*/*ob*) mouse.
By J. H. Tong, M. Limson-Zamora, A. D'Iorio & N. Bégin-Heick 943

The mechanism of adduct formation between NAD^+ and pyruvate bound to pig heart lactate dehydrogenase.
By D. C. Wilton 951

RAPID PAPERS

PAGE

Proteins

N-Terminal sequences of uteroglobin and its precursor.
By M. Atger, J.-C. Mercier, G. Haze, F. Fridlansky & R. Milgrom 985

Nucleic Acids

A rapid and sensitive method for measuring ribonucleic acid in ribosomal preparations.
By C. Mackie, T. H. E. Bryant & J. Mowbray 977

PAGE

Lipids

Cholesterol exchange as a function of cholesterol/phospholipid mole ratios.
By M. J. Poznansky & S. Czekanski 989

Enzymology

An improved method of light-induced pigmentation.
By K. N. Kuan, Y. Y. Lee & P. Melius 981

Stimulation of defective Gunn-rat liver uridine diphosphate glucuronyltransferase activity *in vitro* by alkyl ketones.
By E.-N. M. A. Lalani & B. Burchell 993

INDEXES

PAGE

Author Index 997

PAGE

Subject Index 1002

TENTS

PAGE

up
se
se

903

of
I*
ne
d-

en

909

P-
li-
r-

925

of
o-
-I

931

r-

A.

943

en
te

951

PAGE

of

989

g-

981

ie
n

993

PAGE
1002